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CASE REPORT

Spontaneous tibial compartment syndrome mimicking DVT

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Introduction

Spontaneous tibial compartment syndrome is a rare but well-recognised condition. It can be caused by a variety of factors but non-traumatic acute compartment syndrome (ACS) is rare.

We report a patient who was admitted with a presumptive diagnosis of DVT but eventually diagnosed as compartment syndrome within 24 h of hospital admission.

Case report

A 38-year-old woman, who was previously fit and well, presented with a history of gradually, increasing pain in the left calf for 10 days, there was no history of trauma, claudication or prolonged walking. She had a past medical history of partial nephrectomy and appendicectomy. She was on the oral contraceptive pill.

On examination she had a slightly swollen and tender left calf. A diagnosis of DVT was made. She was admitted under the physicians' care and started on clexane. The pain increased within 24 h of admission and she was referred to the orthopaedic service with suspicion of acute compartment syndrome.

On examination by the orthopaedic team, she had marked swelling and tenderness over the left leg below the knee with paraesthesia of left foot, especially the first web space. She also had severe pain on dorsiflexion of the foot (positive Homan's test), and pain on passive stretching of toes.

She had a Doppler ultrasound scan, which was negative for DVT but the clinical suspicion of acute compartment syndrome was so high that she was taken to theatre.

Upon measurement of pressures, all four-compartment pressures were elevated; anterior compartment 38 mmHg, lateral compartment 61 mm Hg, deep posterior compartment 47 mmHg and superficial posterior compartment 23 mmHg. She therefore underwent four-compartment fasciotomy. A large haematoma was found deep to the gastrocnemius. Muscle biopsies were taken but no evidence of abnormal muscle pathology was found on histology.

Post operatively the patient felt better, the pain improved, the paraesthesia settled, and had good capillary return and pulses. She underwent closure of fasciotomy wound 48 h later and had an unremarkable recovery.

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Discussion

The relative similarity in signs and symptoms of DVT and compartment syndrome can make the diagnosis difficult.

Ivil and Mannion[1] reported a case of a healthy 44-year-old West African man who was diagnosed as a DVT and started on i.v. heparin, but later required fasciotomy for a suspected compartment syndrome, and was subsequently found to have haemoglobin SC disease.

It has been shown that DVT results in increase in intramuscular pressure and in the leg it is proportionate to the extent of thrombosis, so an iliofemoral thrombosis results in a significantly higher elevation in pressure than a calf thrombosis.[2]

In our case, the patient was initially diagnosed with DVT, and delayed diagnosis and treatment could have resulted the devastating sequelae of compartment syndrome.[3]

The majority of patients with calf pain and tenderness presents to physicians with a presumptive diagnosis of DVT and in these patients acute compartment syndrome can easily be missed. We feel that compartment syndrome should be considered in all patients with painful limb and early diagnosis and prompt fasciotomy should be considered if doubt exists.

References

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